pubescence of the calyx also appressed and silvery, while the short pubescence of the stem is subappressed. We have been unable to find any description of the extreme of *L. capitata* with narrow acuminate leaflets and dull spreading pubescence and here propose it as

LESPEDEZA CAPITATA Michx., var. **stenophylla**, n. var., caulibus superne pilosis vel glabratis; foliolis lineari-oblongis vel anguste lanceolatis acuminatis, superne glabris subtus strigosis, pilis opacis; calycibus pilosis, pilis patentis opacis.—Type: open dry ground, Peoria, ILLINOIS, September, 1904, *F. E. McDonald* in Gray Herb. CONNECTICUT: sand bank near Trading Cove Bridge, Norwich, September 15, 1904, *C. B. Graves*; sandy ground along Connecticut River, Glastonbury, September 17, 1911, *C. H. Bissell*.—C. H. BISSELL and M. L. FERNALD.

FESTUCA OVINA L., VAR. DURIUSCULA (L.) KOCH IN SHELBURNE, NEW HAMPSHIRE.

WALTER DEANE.

IN July, 1909, I visited my friends, Mr. and Mrs. G. N. McMillan on their estate in the Androscoggin valley, Shelburne, in northern New Hampshire, some 700 or 800 feet above sea level. During my visit I examined the grasses that form the turf of the large field adjoining the house. The location is on high land above the river and the grass is cut for hay. Besides the ordinary species, such as *Phleum pratense* L., *Agrostis alba* L., var. *vulgaris* (With.) Thurb., *Danthonia spicata* (L.) Beauv., *Dactylis glomerata* L., *Agropyron repens* (L.) Beauv. and the like, there were three Festucas. Two of these were *Festuca rubra* L. and *Festuca ovina* L., the solitary or few culms of the former distinguishing it from the tufted culms of the latter.

The third Festuca, however, was the most interesting of all, for it proved to be the European *Festuca ovina* L., var. *duriuscula* L. (Koch), credited in Gray's Manual, 7th edition, only as sparingly introduced in Wisconsin and Iowa. It occurred in great abundance over the field in dense tufted mats, covering areas varying from one to ten or more feet across, and the dull reddish color of the spikes on their gracefully nodding culms, especially in a strong breeze, made a pic-

ture more attractive to the botanist than to the agriculturist, for the presence of the plant indicates a barren soil. This grass, as well as the other Festucas, was submitted to Prof. A. S. Hitchcock and Mrs. Agnes Chase of the Department of Agriculture, Washington, D. C. They have given them careful examination and have most kindly communicated to me the following notes on the variety.

Under date of October 19, 1911, Mrs. Chase writes; "The Festuca specimens I have examined and compared with our United States and European material. They fall within the duriuscula circle better than anywhere else. The whole ovina group is a complex, intergrading inextricably. Your plants agree with some determined by Hackel as *F. ovina duriuscula*, except that the leaves of yours are more conspicuously clustered at the base. The European *F. ovina* v. *glauca* (Lam.) Hack. is like yours in habit, but in your specimens of it the panicles as well as foliage are glaucous. This, like *duriuscula*, has glabrous lemmas. The var. *glauca* is not known to grow in America." Prof. Hitchcock writes on February 15, 1912; "I have looked over the specimen of Festuca you sent down and I think it is correctly named (*Festuca ovina* var. *duriuscula*). I have compared it with European specimens and have looked up the descriptions in Hackel's monograph of the European species of Festuca and also Ascherson and Graebner's Synopsis of Middle European plants. Your plant is the subvariety *trachyphylla* Hack. which differs from the typical form of *duriuscula* in having scabrous blades."

Before the development of the farm, about twenty years ago, by Mr. Charles Endicott, the former owner, the area where this variety grows was a typical stone field, thickly covered with stones and boulders of various sizes more or less imbedded in the ground. Many such fields are to-day scattered over northern New England. The obstructions were removed and, after grading was done, a foreign clover was first planted, and this may possibly account for the introduction of the *Festuca ovina* L., var. *duriuscula* (L.) Koch, for it has certainly been established there for a number of years. It is in the more sterile portions of the field, left by the removal of the larger rocks, that this grass flourishes, maturing by the end of June, and it is in similar situations in the same field that *Euphorbia Cyparissias* L. fruits so abundantly, as was recorded in RHODORA, xii. 57–61 (1910).

There is no reason why this European grass should not be found elsewhere in New England in suitable localities, and doubtless, now

that attention has been called to it, this will prove true. This Festuca is in my herbarium, while specimens have been deposited in the Gray Herbarium, the Herbarium of the New England Botanical Club, and the Herbarium of the United States Department of Agriculture at Washington, D. C.

CAMBRIDGE, MASSACHUSETTS.

A FLORA OF THE NEW JERSEY PINE BARRENS.—Mr. Witmer Stone's[1] flora of southern New Jersey is one of the notable local floras of recent years. In the author's own words, "it places on record the present condition and history of one of the most interesting botanical areas in the United States,— the Pine Barrens of New Jersey." The introductory chapter is a detailed statistical study of the entire indigenous flora of southern New Jersey. It presents a division of the species into four groups; (1) the species of wide range north and south of New Jersey, (2) northern species which reach their southern limit in or near southern New Jersey, (3) coastal plain species which reach their northern limits between southern New Jersey and the northeastern extension of the coastal plain in Massachusetts, and (4) species of local distribution in or near southern New Jersey. A further analysis shows the composition of the flora of each of the five distinct floral districts; (1) The West Jersey, or middle district (covering the Delaware Valley region south of Trenton, and also the country below the fall line and north of the Pine Barrens), (2) the Pine Barrens, (3) the coastal strip, (4) the Cape May district, and (5) the maritime district. The floral analysis is similar to that in Prof. Fernald's recent discussion of the origin of the Newfoundland flora (v. RHODORA XIII, p. 135 et seq. 1911) and is likewise accompanied by maps illustrating the several types of distribution.

The author concludes that in the New Jersey Pine Barrens we have some of the sand and bog elements of a formerly wide-spread *austral* flora which has been largely "superseded" over most of the coastal plain by more "advanced" elements of similar origin. Mr. Stone weakens his own conclusion by classing many plants with floras to which they certainly do not belong. Thus, the typical pine-barren *Schizaea pusilla* and *Corema Conradii* are considered by Mr. Stone as boreal species which have been driven south, whereas there seems to be no escape from Fernald's conclusion that they are of austral origin. In listing the southern elements in the pine barren flora, Mr. Stone fails to distinguish between species which in the south are coastal only

[1] Stone, Witmer: The plants of southern New Jersey, with especial reference to the Flora of the Pine Barrens and the geographic distribution of the Species. Ann. Report N. J. State Mus. 1910. Part II, pp. 21–828, ff. 1–5, CXXIX plates + map. (Trenton, 1912.)